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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,393	01/26/2001	Luis E. Zapata	IL-10541	6851

7590
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12/30/2002

EXAMINER

ZAHN, JEFFREY N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 12/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,393

Applicant(s)

ZAPATA ET AL.

Examiner

Jeffrey N Zahn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 and 20-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 1 and 21, the Applicant claims a "means for optically pumping..."; it is unclear what the Applicant is specifically referring to in the specification.

Regarding Claims 6, 7, 25 and 26, recited is the limitation "said undoped layer". There is insufficient antecedent basis for this limitation in the claim. In addition, it is unclear where this limitation is positioned structurally.

Regarding Claims 8 and 27, recited is the limitation "said doped layer". There is insufficient antecedent basis for this limitation in the claim. In addition, it is unclear where this limitation is positioned structurally.

Regarding Claims 12, 13 and 29, it is unclear what the cooler arrangement is that is being claimed; specifically, how the reflective layer, second surface and cooler are interrelated structurally. In addition, the Applicant has claimed a "high performance cooler" in Claim 13; this is not a further structural limitation. Also, it is unclear what the Applicant regards as a high performance cooler."

Regarding Claims 14 and 15, it is unclear how the reflective layers claimed are configured structurally with the claimed laser.

Regarding Claims 11, 20 and 28, the Applicant claims a "means for cooling said laser." It is unclear what the Applicant is specifically referring to in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 10-11, 16-21, 28 and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Dixon (US 4847851).

Regarding Claims 1, 18, 19, 21 and 32, Dixon discloses a laser comprising:

a solid-state laser gain medium (12) having a first surface and a second surface opposite to and substantially parallel with said first surface (Fig. 1 and Fig. 4);

an index matched layer attached to said first surface of said laser gain medium, wherein said index matched layer comprises about the same index of refraction as said laser gain medium and further comprises at least one edge (col. 5, line 55- col. 6, line 33); and

means for optically pumping (Fig. 5) said index matched layer from said at least one edge.

Regarding Claims 5 and 24, Dixon discloses an output reflector on the gain medium (Col. 5, lines 55-65).

Regarding Claim 10, Dixon discloses a slap type solid state laser (Fig. 1).

Regarding Claims 11, 20 and 28, Dixon discloses a means for cooling the laser (Fig. 1).

Regarding Claims 16 and 30, Dixon discloses an anti-reflective coating as claimed (col. 5, line 55- col. 6, line 3)

Regarding Claims 17 and 31, Dixon discloses a component (15) that is used as an output coupler as claimed. (col. 3, line 20- col. 5, line 54)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 9 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon as applied to claim 1 above, and further in view of Kozlovsky et al. (US 4764933).

Regarding Claim 2 and 22, Dixon as applied above, lacks pumping from two or more edges. Kozlovsky et al. teaches the use of Multiple diode pumps from different edges to improve the pumping power efficiency of a solid state laser (Fig. 5; see also col. 5, line 64- col. 6, line 15). It would have been obvious to one of ordinary skill in the

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art to combine the teachings of Dixon and Kozlovsky et al. as discussed above to produce a solid state laser, as claimed, with improved efficiency.

Regarding Claims 3, 4 and 23, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimal or workable ranges by routine experimentation. In re Aller, 220 F.2d 454, 456 (CCPA 1955). Here, the Applicant has claimed a range of index of refraction differences. As discussed above Dixon discloses the matching of index of refractions as claimed.

Regarding Claim 9, Disk type solid state laser gain medium is well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dixon to include a disk type gain medium as an alternative arrangement either for power considerations or size.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Marshall (US 5521932), Injeyan et al. (US 5555254) and Peterson et al. (US 2002/0094007).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey N Zahn whose telephone number is 703-305-3443. The examiner can normally be reached on M-F: 8:30-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the


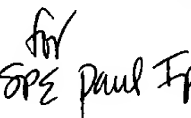
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organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Jeffrey Zahn
December 18, 2002


QUYEN LEUNG
PRIMARY EXAMINER
for
SPE Paul Ip